

WHAT IS CLAIMED IS:

- 59 43311
018 in 18-167
- 5
1. A mobile communication system comprising:
a central processing unit (CPU) for determining a number of consecutive input frames required to construct a super frame, according to a QoS parameter; and
a turbo encoder for turbo encoding the data comprising said super frame determined by the number of consecutive input frames. C2 pms 16 - 22
 2. The mobile communication system as claimed in claim 1, wherein the turbo encoder comprises:
a first constituent encoder for encoding data size of the super frame;
an interleaver for interleaving the data size of the super frame; and
a second constituent encoder, operably connected to said interleaver, for encoding the interleaved data size of the super frame.
 3. The mobile communication system as claimed in claim 2, wherein said interleaver includes an interleaving address mapper for interleaving said super frame.
 - 15 4. The mobile communication system as claimed in claim 2, further comprising:
a multiplexer for multiplexing respective outputs of the first and second constituent encoders; and
a channel interleaver for interleaving an output of the multiplexer.

5. The mobile communication system as claimed in claim 4, wherein said multiplexer punctures a number of bit of said encoded symbols for rate matching.

6. The mobile communication system as claimed in claim 1, wherein the QoS parameter includes information to define the data size of a frame.

5 7. The mobile communication system as claimed in claim 6, wherein the QoS parameter includes a data rate and the number of the input frames to be combined into the super frame is determined by said data size rate and an input frame length.

8. The mobile communication system as claimed in claim 7, wherein the input frame data is less than 320 bits.

9. The mobile communication system as claimed in claim 1, wherein the QoS parameter includes at least a permissible delay, and the number of the input frames to be combined in the super frame is determined by the permissible delay.

10. The mobile communication system as claimed in claim 1, wherein the QoS parameter at least includes a permissible error rate, and the number of input frames to be
15 assembled into the super frame is determined based on the permissible error rate.

11. The mobile communication system as claimed in claim 1, wherein the QoS parameter is a receiver memory size, and the number of the input frames to be assembled into the super frame is determined based on the receiver memory size.

12. The mobile communication system as claimed in claim 1, wherein the system is installed in a base station.

13. The mobile communication system as claimed in claim 1, wherein the system is installed in a mobile station.

5 14. A channel encoding method for a mobile communication system, comprising the steps of:
determining the number of consecutive input frames required to assemble a super frame, according to a QoS parameter; and
turbo encoding the data size of super frame unit determined by combined input frame number of consecutive input frames.

15. The channel encoding method as claimed in claim 14, further comprising the step of performing channel interleaving in accordance with the size of the turbo encoded symbols of the super frame.

16. The channel encoding method as claimed in claim 14, wherein the QoS
15 parameter includes at least a data rate, and the number of the input frames to be assembled into the super frame is determined by said input frame data rate and input frame length.

17. The channel encoding method as claimed in claim 16, wherein the input frame data size is less than 320 bits.

18. The channel encoding method as claimed in claim 16, wherein the QoS parameter includes at least a permissible delay, and the number of the input frames to be assembled into the super frame is determined by the permissible delay.

19. The channel encoding method as claimed in claim 16, wherein the QoS parameter includes at least a permissible error rate, and the number of the input frames to be assembled into the super frame is determined by the permissible error rate.

20. A mobile communication system comprising:
a CPU for determining the number and size of sub frames which can be generated from segmenting one input frame, according to a QoS parameter; and
a turbo encoder for turbo encoding the input frame in accordance with said determined size of the sub frames.

21. The mobile communication system as claimed in claim 20, wherein the turbo encoder comprises:
a first constituent encoder for encoding data size of the sub frames;
an interleaver for interleaving the data size of the sub frames; and
a second constituent encoder, operably connected to said interleaver, for encoding the interleaved data size of the sub frames.

22. The mobile communication system as claimed in claim 21, further comprising a channel interleaver for interleaving said encoded subframes.

23. The mobile communication system as claimed in claim 20, wherein the QoS parameter includes at least a data rate and an error rate.

24. The mobile communication system as claimed in claim 23, wherein the QoS number of segmented sub frames is determined according to the data rate and frame
5 length.

25. The mobile communication system as claimed in claim 20, wherein the size of the input frame data includes at least 20480 bits.

26. The mobile communication system as claimed in claim 20, wherein the QoS parameter includes a permissible delay, and the number of segmented sub frames is determined by the permissible delay.

27. The mobile communication system as claimed in claim 20, wherein the QoS parameter includes a permissible error rate, and the number of the segmented sub frames is determined by the permissible error rate.

28. The mobile communication system as claimed in claim 20, wherein the
15 system is installed in a base station.

29. The mobile communication system as claimed in claim 20, wherein the system is installed in a mobile station.

30. A channel encoding method for a mobile communication system,
comprising the steps of:

determining the number of sub frames which can be generated from one
segmented input frame, according to a QoS parameter;

5 segmenting the input frame into the determined number of sub frames; and
encoding the sub frame data size unit.

31. The channel encoding method as claimed in claim 30, further comprising
the step of assembling symbols encoded by the sub frame unit and channel interleaving
the assembled symbols.

10 32. The mobile communication system as claimed in claim 30, wherein the QoS
parameter includes at least a permissible delay, a data rate and an error rate.

33. The channel encoding method as claimed in claim 32, wherein the number
of segmented sub frames is determined according to the size of the input frame data.

15 34. The channel encoding method as claimed in claim 33, wherein the size of
the input frame data includes at least 20480 bits.

35. The channel encoding method as claimed in claim 33, wherein the number
of disassembled sub frames is determined by the permissible delay.

36. The channel encoding method as claimed in claim 33, wherein the number

of the disassembled sub frames is determined by the said error rate.

37. A mobile communication system comprising:

a decoder for turbo decoding data being received as a super frame, wherein said super frame is assembled as a plurality of consecutive original data frames; and

5 a frame reassembler for reassembling an output of the decoder into the plurality of data frames in accordance with message information about the number of original frames constituting said super frame.

38. The mobile communication system as claimed in claim 37, wherein said message information is received during a call setup.

39. The mobile communication system as claimed in claim 37, further comprising a CPU for determining the number of original frames constituting said super frame based upon received message information about the number of the original frames assembled into the super frame and the size of the respective frames, and providing the determined number and size information to a frame reassembler.

15 40. The mobile communication system as claimed in claim 37, wherein the system is installed in a base station.

41. The mobile communication system as claimed in claim 37, wherein the system is installed in a mobile station.

42. A channel decoding method for a mobile communication system, comprising the steps of:

turbo decoding data being received as a super frame, wherein said super frame is constructed as a plurality of consecutive original data frames; and

5 recombining the turbo decoded data into the plurality of consecutive original input data frames in accordance with message information pertaining to the frames constituting said super frame.

43. A mobile communication system comprising:

a decoder for segmenting a received data frame comprised of multiple sub frames into said multiple sub frames; and

turbo decoding said multiple sub frames; and

a frame reassembler for reassembling an output of the turbo decoder into an original frame in accordance with information about the number of sub frames which define said received data frame.

7
15 44. The mobile communication system as claimed in claim 43, further comprising a CPU for determining the number of the sub frames and the size of the respective sub frames upon receiving the message information about the number of sub frames and the size of the respective sub frames, and providing the determined number and size information to the frame reassembler.

20 45. The mobile communication system as claimed in claim 43, wherein the system is installed in a base station.

46. The mobile communication system as claimed in claim 43, wherein the system is installed in a mobile station.

47. A channel decoding method for a mobile communication system, comprising the steps of:

5 segmenting received data into multiple sub frames according to received message information;

turbo decoding said sub frame unit; and

reassembling the turbo decoded data frame into the received frame in response to said message information about the number of sub frames.

Add
a6

Add
B3